

REMARKS

Claims 1-5 were examined and reported in the Office Action. Claims 1 and 3-5 are rejected. Claim 3 is amended. New claim 6 is added. Claims 1-6 remain.

Applicant requests reconsideration of the application in view of the following remarks.

I. In the Drawings

Figure 1 was objected to in the Office Action because it lacks a label for rectangular component between 150 and 170. Applicant has amended Figure 1 and the specification to overcome the drawing objections. Approval is respectfully requested.

II. 35 U.S.C. § 103

A. It is asserted in the Office Action that Claims 1, 3, and 4 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 6,504,611 issued to Kogan et al. ("Kogan") in view of U. S. Patent No. 6,041,071 issued to Tayebati ("Tayebati"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

According to MPEP §2142 "[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)). Further, according to MPEP §2143.03, "[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (*In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." "All words in a claim must be considered in judging the patentability of that claim against the prior art." (*In re Wilson*, 424 F.2d 1382, 1385, 165

USPQ 494, 496 (CCPA 1970), emphasis added.)

Applicant's amended claim 1 contains the limitations of "[a]n optical alignment apparatus using visible light source and images, comprising: a first light source for providing light of a visible wavelength range to perform optical alignment; a second light source providing light of an infrared wavelength range; a micrometer stage for aligning the light outputted from the first light source or the second light source with an active area of a detector; a lensed fiber connected to the micrometer stage, for inputting light into the active area of the detector; an optical alignment confirming means for visually confirming whether the light outputted from the lensed fiber is aligned with the active area of the detector; an image information acquiring means connected to the optical alignment confirming means, for acquiring image information; and a control means for operating the micrometer stage based on the image information acquired by the image information acquiring means to perform optical alignment."

Therefore, Applicant's claimed invention is directed to an optical alignment device and a method for aligning light in the infrared wavelength range that is used for optical communication. The device and method performs the alignment quickly, precisely and economically by using images and a light source generating light in the visible wavelength range.

Tayebati discloses an external cavity mirror for use in a semiconductor laser. The external cavity mirror includes a waveguide formed on a substrate of highly electro-optic material, and including electrically-operated means for determining the reflectance attributes of the external cavity mirror.

Kogan discloses a method and device for three-dimensional optical alignment of optical components that are used for testing or assembly purposes. The alignment device of Kogan uses light in the visible wavelength range as a secondary method to assist active alignment of optical components based on the measured optical output at a wavelength outside the visible light range. Kogan has an object to align optical elements 12 and 16 by optical light alignment and is required between visible light vision system 20 and optical element 16, and alignment is also required between

dichroic mirror 40 and optical measuring device 48. In order to control micrometer stages 4,6,8, motorized X-Y-Z motion apparatus 2 and platform 10, motion control system 50 needs information from optical measurement device 48 and electronic camera 22.

Therefore, both a visible light from the element 24, and the optical measurement device (to measure the optical intensity) are indispensable. In other words, in Kogan light alignment cannot be performed by using only the visible light. Instead, the apparatus and the method of Kogan align the optical light with two steps. Furthermore, the light is aligned in x, y and z directions.

Distinguishable, Applicant's claimed invention claims an apparatus that aligns the optical light by using images and a light source that generates light in the visible wavelength range. Further, Applicant's claimed invention also claims an optical power monitor. The optical power monitor maintains constant volume of the source light when generating the source light and also when not performing optical alignment. In view of the structure of Applicant's claimed invention, the alignment of only elements 241 and 250 is required to align the optical light. In other word, control circuit 260 needs only information from CCD 270 in order to control micrometer stage 230. Therefore, Applicant's claimed invention aligns optical light in one step. Further, the aligning directions are x, y, z and tilt directions.

Therefore, even if Kogan were combined with Tayebati, the resulting invention would still not include all of Applicant's claimed limitations. And, therefore, there would be no motivation to combine Kogan with Tayebati.

Moreover, by viewing the disclosures of Kogan and Tayebati, one can not jump to the conclusion of obviousness without impermissible hindsight. According to MPEP 2142, [t]o reach a proper determination under 35 U.S.C. 103, the examiner must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention 'as a whole' would have been obvious at that time to that person. Knowledge

of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the 'differences,' conduct the search and evaluate the 'subject matter as a whole' of the invention. The tendency to resort to 'hindsight' based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art."

Applicant submits that without first reviewing Applicant's disclosure, no thought, whatsoever, would have been made to invent a device that aligns optical light in one step in x, y, z and tilt directions.

Neither Kogan, Tayebati, nor the combination of the two, teach, disclose or suggest the limitations contained in Applicant's claim 1, as listed above. Since neither Kogan, Tayebati, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's claim 1, as listed above, there would not be any motivation to arrive at Applicant's claimed invention. Thus, Applicant's claim 1 is not obvious over Kogan in view of Tayebati since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly or indirectly depend from claim 1, namely claim 3 and 4, would also not be obvious over Kogan in view of Tayebati for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejections for Claims 1, 3 and 4 are respectfully requested.

B. It is asserted in the Office Action that Claim 5 is rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over Kogan in view of Tayebati and further in view of U. S. Patent No. 5,838,450 issued to McCoy et al. ("McCoy"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant has addressed Kogan in view of Tayebati above in section II(A) regarding Applicant's claim 1. Applicant's claim 5 contains the limitations of "[a]n optical alignment method using a visible light source and images, comprising the steps of: a) aligning light outputted from a visible light source with an active area of a detector; b) inputting the light outputted from the visible light source into the active

area of the detector through an optical coupler and lensed fiber; c) visually confirming on what part of the active area of the detector the light transmitted through the lensed fiber is focused by using a microscope, and providing image information, which shows an extent of optical alignment and is provided by a charge coupled device connected to the microscope, to a control circuit unit; d) controlling the micrometer stage to perform optical alignment by using the image information provided by the charge coupled device in the control circuit unit; and e) performing optical alignment between the lensed fiber and the active area of the detector by operating the micrometer stage under the control of the control circuit unit."

McCoy discloses a mask alignment system for integrated circuit lithography that achieves reticle to wafer referencing. In McCoy a detection system located below the main projection lens detects the image of reticle alignment marks while also detecting wafer alignment marks. The reticle marks are imaged in light at the exposure wavelength. McCoy, however, does not teach, disclose or suggest a method to align optical light with one step in x, y, z and tilt directions.

Neither Kogan, Tayebati, McCoy, nor the combination of the three, teach, disclose or suggest the limitations contained in Applicant's claim 5, as listed above. Since neither Kogan, Tayebati, McCoy nor the combination of the three, teach, disclose or suggest all the limitations of Applicant's claim 5, as listed above, there would not be any motivation to arrive at Applicant's claimed invention. Thus, Applicant's claim 5 is not obvious over Kogan in view of Tayebati and further in view of McCoy since a *prima facie* case of obviousness has not been met under MPEP §2142.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection for Claim 5 is respectfully requested.

III. Allowable Subject Matter

Applicant notes with appreciation the Examiner's assertion that claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant respectfully asserts that claims 1-6, as they now stand, are allowable for the reasons given above.

CONCLUSION

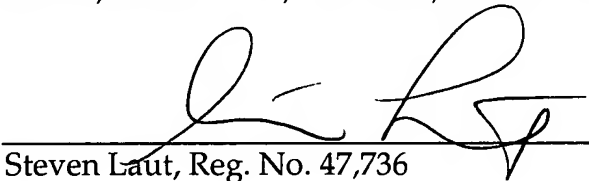
In view of the foregoing, it is submitted that claims 1-6 patentably define the subject invention over the cited references of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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Dated: September 3, 2004

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail with sufficient postage in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia 22313-1450 on September 3, 2004.


Jean Svoboda